



U.S. Department of Energy  
Energy Efficiency and Renewable Energy

# Energy Savings Performance Contracting

John DiModica, AICP, LEED AP

Energy Efficiency & Sustainable Design Program Mgr.

DCAM

Contact info:

[john.dimodica@state.ma.us](mailto:john.dimodica@state.ma.us)

(617) 727-4030, x. 454



# Statutory Basis - MGL Ch. 25A, § 11C

## Contracts for procurement of energy management services

- Energy Management Services (EMS)
  - a.k.a. Energy Savings Performance Contracting (ESPC)
- For public agencies (cities/towns) – administered by DOER
- For governmental bodies (State Executive Agencies) – admin by DCAM
- Alternative Mechanism for developing (& financing) energy and water conservation projects
- Turnkey Design-Build process, NOT design-bid-build



## Contract Scope & Duration

### Up to 10 years

- Comprehensive mix of Energy Conservation Measures (ECMs)
- Most PCs are financed for 10 years or less

### Up to 20 years - if Cogen

- Include cogeneration where facility has significant 24/7/365 heat & hot water load
- large campus, prisons, hospitals, etc.
- longer aggregate PB period  
= more ECMs included



# Typical Project Size

Typically \$1+ Million

DCAM experience: \$1.5 - \$40+ Million (average \$5-15 Mil.)

Smaller projects doable, but not as attractive to ESCos - more appropriate as utility-funded (i.e., rebate) projects

If  $> \$200,000$  – Developed by DCAM for State Agencies

If  $< \$200,000$  – May be delegated to agency for management w/ authorization by DCAM Commissioner



# Contractor Certification (Public Projects)

- Same as for Ch. 149 (bond-funded) projects
- Contractors shall be certified by DCAM under Energy Management Systems category
- Update Statements must be issued with proposals (reflect firm's experience, finances & current work)
- Sub-contractor Certification NOT required



# Project Finance Options

- Bond-funded (Cash)
- Lease Purchase - Tax Exempt Lease Purchase (TELP) - (Public)
  - Contractor paid up-front via a lease-purchase loan mechanism
  - \$ from bank/lender paid up-front to contractor, facility repays lender over time (typically from savings achieved from measures installed)
    - Most common & considered most advantageous
    - Tax benefits & reduces contractor risks
- Shared Savings
  - Contractor is paid based on a percentage of savings achieved over specified contract period
    - Contractor may charge “risk-premium” and needs to self-finance
    - Financing is NOT tax exempt



# Develop Request for Proposals (RFP)

- **Mandatory Information**

- Time/date and location where proposal should be delivered
- Description of services to be included in proposal:
  - Broadly defined
    - Let ESCos determine most cost effective options in proposal/audit
- Specific requirements and evaluation criteria
- Clear/Concise Contract terms and conditions
  - Including any mandatory and non-negotiable provisions
    - (i.e., Prevailing Wages, M/WBE Provisions, etc.)



# Develop Request for Proposals (RFP) (2)

- Additional, Project-specific information to be included in RFP:
  - Baseline consumption information  
typically, three years of utility data, incl. sample bills, rates, schedules, etc.
  - Facility profile – details on facility, hours of operation, building stock, equipment condition (as known), etc.
  - Additional needs or requirements requested by facility  
i.e., cogeneration, fuel switching, new A/C, windows, etc.
- Establish selection committee:  
Awarding authority planners, facility management staff, City Manager or CFO, DCAM or DOER, and any non-bidding consultants hired for process management or technical assist





## Further Steps Necessary for Project Development

- If Public Agency/Authority - File RFP with DOER  
(at least one week prior to advertisement)
- Advertise Project (min. 2 weeks for ad.)
  - Central Register, major and local newspapers
  - Consider posting on Comm-Pass.com or City/Agency website
- Distribute RFP to all requesting parties



# Further Steps Necessary for Project Development

- Conduct pre-proposal conference and tour at facility
- Provide ESCos access to facility for measurement, testing, evaluation of existing equip. (escorted to begin)
- Review, approve, and post any addenda
  - Post electronically and mail to all companies requesting proposal
- Provide opportunity for ESCos to submit clarifying questions in writing
- Post all ?'s & Responses and post/provide to all potential bidders
- Allow 6-12 weeks for receipt of proposals (depending on complexity of project)



# Typical Evaluation Criteria

- Comprehensiveness of Services Provided
- Technical Feasibility of proposed Conservation Measures
- Net Financial Return
- Track Record of ESCo in all areas of Contract Services
- ESCo's ability to implement (and finance) capital improvements/expenditures of the scale proposed
- Protection of Awarding entity against risk
- Applicable savings calculations and monitoring & verification procedures
- Other Criteria, as needed or requested



# Develop Detailed Energy Audit (DEA)

- Audit contract to specify a detailed technical energy audit
  - Audit must validate the program proposed in the original proposal
  - ESCo to finalize the numbers for baseline energy & water use, project costs (& breakdown of ECM costs), and any agreed-to additions or deletions from measures included in proposal
  - Must meet the guaranteed energy savings indicated in the proposal  
may allow slight variation of the *expected savings*  
but no variation from **guaranteed savings!**



# Develop Contract

## a.k.a. Energy Services Agreement (ESA)

- Contract for construction based on final, accepted DEA
- Establishes scope of work, expected schedule of values (completion schedule), project effective and completion dates, and any applicable penalties (i.e., savings shortfall guarantees, late completion, etc.)
- Establishes savings guarantees and maintenance provisions for contract term (up to 10 or 20 years)
- Articulates standard terms & conditions (i.e., labor & wage rates, waste management, equip. approvals, etc.)
- Articulates all contractual terms, savings guarantees, termination clauses, standards of service, etc.



# Establish Financing

- Finance model to be used should be established during project development phase
  - Bond Funded (Cash)
  - Tax Exempt Lease-Purchase (public projects)
  - Shared Savings
- Financing is established to cover the construction cost plus any advance payments for out-year services:
  - Energy management/control; monitoring and verification (M&V); and any necessary maintenance of new equipment
  - Include Termination Schedule for possible cancellation of out-year services (\$ to be repaid to facility/authority if contract terminated)



# Construction

- ESCo is responsible for all construction activities and associated project management - Turnkey project
- No certification of subcontractors or designers necessary
- Design, equipment and subcontractor approval process is recommended
- ESCo & all subs to pay prevailing wages & meet M/WBE goals (Public)
- ESCo must meet detailed Schedule of Values as articulated in ESA
- ECM completion dates trigger savings guarantees and warranties
- Conduct routine (weekly) construction progress meetings
- Owner should have a Resident Engineer present on-site all times
- Owner should utilize an independent Commissioning Agent



# Monitoring and Verification of Savings

- M&V reports:
  - Received (quarterly) from ESCo to verify savings for customer throughout the project guarantee period
    - May include:
      - Stipulated savings (engineering estimates based on accepted parameters of equipment operation),
      - Metered savings (actual post-retrofit measurements of electricity, gas, steam),
      - or a combination depending on the ECMs

Savings shortfalls in M&V will trigger Shortfall Payments





# Commissioning

- Third Party Commissioning Agent (recommended):
  - Review of design and equipment submittals for oversight and review of technical feasibility; evaluation of M&V approaches; observation of functional testing during construction; oversight of facility training, esp. for EMS
  - Provides a level of technical oversight & review not common to facilities maintenance or planning staffs.
  - Recommended that CA be on board early (in proposal evaluation phase) and continue through audit and construction phases



# Training and Maintenance

- Staff Training & Maintenance for all NEW equipment, but not for routine measures, like lighting, air handlers, etc.
- Training
  - ESCo to include training on new equipment, controls, etc. for facility staff
- Maintenance
  - ESCo to provide maintenance for measures not previously on-site such as cogeneration, satellite boilers, EMS, etc.